

**NATURAL RESOURCES CONSERVATION SERVICE
CONSERVATION PRACTICE STANDARD**

HEDGEROW PLANTING

(Ft.)

CODE 422

DEFINITION:

Establishment of dense vegetation in a linear design to achieve a natural resource conservation purpose.

PURPOSE:

This practice may be applied as part of a resource management system to support the following purpose:

Providing at least one of the following conservation functions:

- Food, cover and corridors for terrestrial wildlife.
- Food and cover for aquatic organisms that live in watercourses with bankfull width less than 5 feet.
- Living fences
- Boundary delineation
- Contour guidelines
- Screens and barriers to noise and dust
- Improvement of landscape appearance

CONDITIONS WHERE PRACTICE APPLIES:

This practice applies wherever it will accomplish at least one of the purposes stated above.

CRITERIA

General Criteria Applicable to All Purposes

Hedgerows shall be established using woody plants, or perennial bunch grasses producing erect stems attaining average heights of at least 3 feet and persisting well over winter.

Plants selected must be suited and adapted to the soils, climate and conservation purpose.

No plant listed by the state as a noxious weed shall be established in a hedgerow.

The practice shall be protected from livestock grazing and trampling to the extent necessary to ensure that it will perform the intended purpose(s).

Competing vegetation shall be controlled until the hedgerow becomes established. Control shall continue beyond the establishment period, if necessary.

Additional Criteria for Food, cover and Corridors for Terrestrial Wildlife

Establish at least two species of vegetation.

Choose native plants whenever possible.

Selected plants shall provide cover and/or food to support the landowner's wildlife objectives.

Minimum hedgerow width, at maturity, shall be 15 feet. This may necessitate establishment of at least one row of plants.

To improve aquatic habitat in a small watercourse, the plantings shall be site-adapted, large enough at maturity and installed

close enough to shade the watercourse.

Additional Criteria for Living Fences

Selected plants shall attain a size adequate to create a barrier to protect livestock or humans, as needed.

Selected plants shall have a densely branched growth habit.

If the purpose is to protect livestock, selected plants shall not be poisonous or hazardous to the animals.

Additional Criteria for Boundary Delineation

Hedgerows shall be aligned along boundaries of fields, or woodlands to differentiate land management units.

Additional Criteria for Contour Guidelines

Hedgerows shall be aligned so they provide permanent contour markers supporting implementation of the Contour Farming (330) and Contour Stripcropping (585) Conservation Practices. Refer to those conservation practices standards (above) for alignment criteria.

Additional Criteria for Screens, Noise and Dust Barriers

Screening hedgerows provide privacy, hide unsightly areas from view or reduce noise.

Hedgerows shall be located where they most completely obstruct a line of sight, offensive sound, or dust.

Selected plants shall attain a height and fullness sufficient to break the line of sight, or baffles sound and dust.

Additional Criteria for Improvement of Landscape Appearance

The hedgerow design shall meet the aesthetic objectives of the landowner.

Plants shall be selected based upon the landowner's preferences for color, texture, and growth habit.

CONSIDERATIONS:

General

Hedgerows can be planned in combination with other practices to develop complete conservation systems that enhance landscape aesthetics, reduce soil erosion, improve sediment trapping, improve water quality, and provide wildlife habitat.

Hedgerows following land contours create meandering lines on the landscape, produce a natural appearance, and increase the availability of "edge" wildlife habitats.

Hedgerows containing a mixture of native shrubs and small trees provide greatest environmental benefits.

Use of bare root and containerized seedlings will accelerate hedgerow development.

Consider the amount of shading a hedgerow will provide at maturity. Shading may impact growth of adjacent plants, microclimate, and aesthetics. Limiting renovation events to one-third of a hedgerow's length or width will prevent sudden elimination of the practice's wildlife habitat function.

Periodic root pruning can reduce nutrient and water robbing from adjacent cropland.

Considerations for Wildlife Food, Cover, and Corridors

Hedgerows can provide travel lanes, or corridors that allow wildlife to move safely across a landscape.

Generally, wider corridors accommodate more wildlife use.

Linking fragmented habitats may increase wildlife use of an area.

Hedgerows can complement the availability of naturally occurring wildlife foods.

Hedgerows can provide wildlife with cover for feeding, loafing, nesting, and caring for young.

Dense or thorny shrub thickets provide songbirds with important nesting sites and a refuge to escape predators.

Establishment of evergreen plants provides year-round concealment and thermal cover for wildlife.

Establishment of herbaceous vegetation along the edges of a hedgerow can further enhance the habitat functions of a hedgerow.

Installation of artificial nest boxes with predator guards can encourage cavity-nesting birds and small mammals to utilize a hedgerow.

Considerations for Living Fences

Thorny shrubs and trees can improve a living fence's barrier effect.

Considerations for Screens and Noise Barriers

From eye-level, hedgerows reduce the line-of-sight across open areas, concealing objects behind them from view.

Consider the design from viewpoints on both sides of the screen.

Locate noise barriers as close to the source of noise as possible.

Combination of shrubs and/or trees can create more effective screens than single species plantings.

Evergreens provide foliage that can maintain a screen's year-round effectiveness.

Considerations for Improving Landscape Appearance

Consider plants' seasonal display of colors on bark, twigs, foliage, flowers, and fruit.

Consider plants' growth habits (outline, height and width).

Considerations for Water Quality and Quantity

Water quality benefits may arise from:

- a. Arresting sediment movement and trapping sediment-attached substances.
- b. Infiltration and assimilation of plant nutrients.

- c. Water cooling effects resulting from increased shade on small watercourses.

A hedgerow will increase surface water infiltration by improving of soil structure around its root zone. However, evapo-transpiration may reduce groundwater recharge benefits.

Considerations for Incidental Trapping of Snow or Sand

Although not a primary purpose, hedgerows may incidentally trap wind blown snow or sand.

Consider installing hedgerows on alignments that prevent trapping and accumulation of snow and sand on public roads.

Refer to the Windbreak/Shelterbelt Establishment (380) standard for criteria when snow or sand trapping is a primary conservation purpose.

PLANS AND SPECIFICATIONS:

When using this Practice Standard for wildlife habitat improvement, development of management options will be based on the use of the Aquatic & Terrestrial Habitat Evaluation Guide (Biology Technical Note 14). This habitat evaluation process will result in a quality rating for habitat based on a Resource Management System (RMS). The RMS must meet the minimum acceptable level as listed in Section III of the Field Office Technical Guide.

Specifications will be developed for each site. The specifications will be prepared in accordance with the criteria for the Standard and shall describe the requirements for applying the Practice to achieve its intended use. Appropriate job sheets, narrative statements in the conservation plan, or other acceptable documentation, will be used to record the items needed to carry out this practice. Requirements for operation and maintenance of the practice will be incorporated into site specifications.

The conservation plan will:

1. Designate the location of all hedgerows within the area covered by the conservation plan.

2. List the plant species, which will be used in the hedgerow planting.
3. List those practices necessary to manage and/or maintain the hedgerow, such as irrigation on dry land sites.
4. Where appropriate, haying and/or livestock grazing plans will be developed so as to allow the establishment, development, and management of the hedgerow.
5. Include an inspection schedule if installed, to assess condition and functionality of the hedgerow.

USDA-NRCS, September 1999. Washington & Oregon Guide for Conservation Seedings and Plantings. Pullman, Washington. 126 Pages.

OPERATION AND MAINTENANCE

Supplemental plantings may be required when survival is too low to produce a continuous hedgerow.

Vegetation shall be protected from unwanted fire and grazing throughout its lifespan.

Pests shall be monitored and controlled.

Periodic applications of nutrients may be needed to maintain plant vigor.

Renovation activities shall be scheduled to prevent disturbance during the wildlife-nesting season.

REFERENCES

Dring, Timothy, Rachel Maggi, Martha Chaney and Mark Schuller, 2000. Biology Technical Note 14, Aquatic & Terrestrial Habitat Evaluation Guide, NRCS Washington.

Giles, Robert H. Jr., 1971. Wildlife Management Techniques, Third Edition: Revised. The Wildlife Society, Washington D.C. Pages 162, 173, 198, 200.

Henderson, Robert R, Tom Buchanan, Great Plains Agricultural Council. Wildlife Resources Committee, Kansas State University. Cooperative Extension Service, April 1988. Increasing Wildlife on Farms and Ranches. Manhattan, Kansas. Pages 123-134.

National Biology Handbook, Part 614.4, "Conservation Corridor Planning at the Landscape Level". Natural Resources Conservation Service, August 1999.